

means coupled to the linking means for controlling the quality of the first and second sets of program source materials by selective use of an objective quality standard and subjective quality standard, wherein the objective quality standard includes metrics of the quality of the layers, and the subjective quality standard is controlled by the user; and

means for interactively producing the second set of program source material; wherein the user of the system can produce additional information related to the first set of program source material.

REMARKS

This Amendment is in response to the Office Action dated June 12, 1995 in which the specification was objected to and Claims 1-39 were rejected 35 U.S.C. §112 and §103.

Applicant's Declaration as originally filed making claim for priority based on a PCT application under 35 U.S.C. §119 was made in error. Pursuant to 37 C.F.R. 1.67, a supplemental Declaration is submitted herewith claiming priority under 35 U.S.C. §120 on U.S. application 07/975,824, filed November 13, 1992.

The specification has been amended to correct various informalities, as suggested by the Examiner. The Summary of the invention was amended to reflect new claim 40, and the Abstract has been amended to provide a more complete description of the invention.

The specification has also been amended to clarify certain passages of text. For example, the text explaining Figures 2A and 2B was amended to clarify the interaction between the MCPS 44 and the IMM 52. Support for the amendment can be found throughout the specification. For example, "... an interactive multimedia mastering system (IMM) 42 ... receives program source material. The IMM system provides information from the telephone network to a multimedia call processing system (MCPS) 44 ..." (Spec. pg. 12, lns. 11-15). "... the key is cross referenced to a particular branch of the interactive multimedia program where each of the branches allows plurality of functions or commands to be accessed in order to replicate the program model." (Spec. pg. 21, lns. 5-8). It is respectfully submitted no new matter has been introduced in the specification.

The drawings have also been amended to add reference numerals. Pursuant to §1.85, corrected figures (with changes in red) are attached hereto.

Claims 1-39 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1, 13, 27-30, and 37-39 have been canceled. Claims 1 and 27 have been replaced with new claims 40 and 41, and independent Claim 31 has been amended to incorporate elements of new claim 41. It is now believed that independent claims 40, 41 and 31 more clearly recite subject matter of the invention.

Claim 40 now recites a communications system for transmitting interactive multimedia information over a

communication medium having limited bandwidth. The communication
150 system comprises interactive multimedia mastering (IMM) system
means for receiving multimedia program materials from a program
source, the IMM system includes means for optimizing the program
materials by separating the information into primary and
155 secondary layers using psychographic parameters to differentiate
between important and less important multimedia information. The
optimized program materials includes a plurality of program
branches where each of the branches allows a plurality of
functions and data to be accessed in order to replicate the
program source. The system further comprises a multimedia call
160 processing system (MCPS) coupled to the IMM for receiving and
distributing the optimized program materials from the IMM; and a
plurality of interactive multimedia devices (IMDs) for receiving
the optimized program materials from the MCPS. The plurality of
the IMDs including means for accepting user commands for
165 multimedia information and for responsively transmitting a
control signal to the MCPS.

The MCPS further includes a voice mode means responsive to
the control signal for branching to a program branch in the
optimized program materials indicated by the control signal. The
170 MCPS also includes means for switching to a data mode for
transmitting data from the indicated program branch back to the
at least one of the plurality of IMDs and then switching back to
the voice mode to accept further control signals from the at
least one of the plurality of IMDs, whereby only selected

175 portions of the optimized program materials are sent from the
MCPS to the IMDs thereby reducing the bandwidth required to
transmit the multimedia program materials.

The Examiner objected to numerous words used in claims
as being vague and indefinite and for having unclear meanings.
180 It is submitted that the meanings of the words in the claims are
made clear by the specification. Furthermore, most of the words
have plain meanings and no further explanation is required.
According to the MPEP, "[w]here elements ... and processes, which
are conventional and generally widely known in the field to which
185 the invention pertains, form a part of the invention described
and their exact nature or type is not necessary for an
understanding and use of the invention by a person skilled in the
art, they should not be described in detail." MPEP 601(g).

In addition, the present applicants references a related
190 application, also in accordance with MPEP 601(g). "Where
particularly complicated subject matter is involved or where the
elements, compounds, or processes may not be commonly or widely
known in the field, the specification should refer to another
patent or readily available publication which adequately
195 describes the subject matter."

It is respectfully submitted that the meanings of the words
in the claims would be readily understood by one with ordinary
skill in the art after reading the specification and viewing the
figures. Accordingly, it is believed independent claims 40 and
200 41, and dependent claims 2-12, 14-26, and 36-28 particularly

point out and distinctly claim the subject matter of the invention and are in compliance with 35 U.S.C. §112.

The Examiner rejected Claims 1-10, 12-13, 15, 17 and 23-39 under 35 U.S.C. §103 as obvious over U.S. Patent No. 5,220,420 issued to Hoarty et al.

Hoarty is directed to a multimedia system having distributed information processing and storage. The system includes a regional processing center connected to computer nodes via a cable line, and a home interface controller connected to one of the nodes that interfaces with a user's TV set. The regional processing center receives program materials from service providers and processes the materials to create customized data "magazines" for each cable system. This data is then forwarded and stored in the nodes, which are placed throughout the cable system and serve about 40 homes. Through the interface controller, the multimedia data is displayed on the TV for interactive sessions with the user. The interface controller transmits user remote control actions back to the node and then to a last downstream node, which relays the commands to the regional processing center.

In contrast to Hoarty, the present invention is directed towards a system and method for enhancing interactive multimedia information that is transmitted across a network. The system includes an interactive multimedia mastering (IMM) system, a multimedia call processing system (MCPS), and a plurality of interactive multimedia devices (IMDs), which optimize multimedia

information in manner not taught or suggested by Hoarty. In addition, the present invention processes both the multimedia information and user commands such that only requested multimedia materials are provided to the user over the network, thereby reducing the bandwidth required to transmit the data.

Referring now to the claims, independent claims 40 has been added to recite that the IMM for receiving multimedia program materials from a program source, includes "means for optimizing the program materials by separating the information into primary and secondary layers using psychographic parameters to differentiate between important and less important multimedia information."

Psychographic parameters are defined in the specification as parameters that relate to an individual's sensory perceptions when encountering multimedia information. In the instance of video images, for example, the foreground and background information might be divided into different layers. Similarly, in the case of audio information, the news information, weather information, or the like may be one layer whereas the background music may be the other layer. In the present invention, these layers are divided into primary and secondary layers in accordance with the information's importance relative to the program model (See specification at pgs. 9-11).

It is respectfully submitted that Hoarty does not teach or suggest separating information into primary and secondary layers

using psychographic parameters to differentiate between important and less important multimedia information.

255 Hoarty teaches the use of layers, but the meaning of these layers is distinctly different from the present invention. Hoarty discloses processing and storing digitized pictures and sound in an object-oriented database in which:

260 The data objects in the system database are advertisements in the form of layered or stacked information which allow a viewer to dig into the stack (like turning pages in a catalog) to reveal levels of information that interest the viewer. The layered advertisement is a video equivalent of a consumer brochure or catalog where the viewer can flip through at will to view relevant sections ... The
265 advertisements ... can be text only ... or could contain a picture. (Col. 7, lns 37-49).

Hoarty's layers are not based on the relative importance of the information, as claimed in the present invention, but rather on
270 levels of detail of the information. Furthermore, Hoarty does not separate information into layers using psychographic parameters as claimed in the present invention. Therefore, Hoarty does not teach or suggest the separating function of the IMM as recited in independent claims 40.

275 Furthermore, claim 40 recites a multimedia call processing system (MCPS) coupled to the IMM for receiving and the optimized program materials from the IMM, and for distributing the materials to a plurality of interactive multimedia devices (IMDs). The MCPS includes a voice mode means responsive to a
280 user's control signal for branching to a program branch in the optimized program materials indicated by the control signal, and means for switching to a data mode for transmitting data from the

indicated program branch back to the IMD. After transmitting the data, the MCPS switches back to the voice mode to accept further control signals from the IMD.

The Examiner states on page 11 of the Office Action that "it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the multimedia call processing system to return back to a voice mode after the data transmission, since the voice mode would have allowed the user at the IMD to request another set of information by voice via the telephone."

Obviousness cannot be established absent some teaching, suggestion, or incentive. It is respectfully submitted that Hoarty does not suggest (expressly or by implication) an MCPS that switches between a voice mode for accepting commands via telephone, and a data mode for transmitted requested information. Hoarty discloses that after a user has retrieved selected multimedia information, an autodialer may be used to dial the phone number of the advertiser to allow the user to speak to the advertiser. (Col. 4, lns. 8-12). Dialing the number of an advertiser from the user's telephone, however, does not teach or suggest transmitting a control signal from the user's telephone to an MCPS that is operating in voice mode in order to request certain portions of the multimedia information through the telephone.

Furthermore, it is believed Hoarty does not teach or suggest an MCPS responsive to the control signal for branching to a

program branch in the optimized program materials indicated by
310 the control signal. In fact, Hoarty does not teach or suggest
that the multimedia information includes "a plurality of program
branches where each of the branches allows a plurality of
functions and data to be accessed in order to replicate the
program source," as claimed and as described on pg. 21 of the
315 specification.

The Examiner states that because Hoarty discloses that a
channel can only be viewed by the home that it was allocated to
(Col. 11, ln. 28), Hoarty "shows that the information is branched
to the designated homes only." Allocating a channel to one
320 house, however, in no way teaches or suggests that the nodes,
which store the multimedia information, branch to different
portions of the multimedia information in response to user
commands. In the absence of any teaching or suggestion to the
contrary, it is believed the use of this feature of the reference
325 is a result a improper hindsight, and cannot be used to establish
obviousness.

Therefore, it is believed that the claimed features of the
present invention, described above, in combination with the other
features as claimed represent a patentable distinction over
330 Hoarty.

Referring now to new independent claim 41, since claim 41
also recites means for separating multimedia information into
primary and secondary layers, Hoarty also fails to render claim
41 obvious for the reasons stated above with respect to claim 40.

335 Hoarty also fails to teach or suggest other claimed features
of the claim 41. For example, claim 41 recites an interactive
multimedia system comprising an interactive multimedia mastering
system (IMMS) and an interactive multimedia device (IMD). The
340 IMMS includes means for enhancing the layers in accordance with
the program model to enhance user interactivity of the multimedia
information, the layers being enhanced through selective use of
an objective quality standard and a subjective quality standard,
wherein the objective quality standard includes metrics of the
quality of the layers, and the subjective quality standard is
345 controlled by the user.

 The Examiner states on page 17 of the Office Action that
because Hoarty discloses that the headend computer transmits data
updates at a preferred data rate of 9600 bps or greater, Hoarty
"inherently shows that the faster data is chosen for speedy
350 interchange of information, hence enhancing interactivity."
Applicant respectively traverses this statement.

 As stated on page 4 of the specification, although there are
many known video enhancing capabilities, audio enhancing,
printing, and telephone call processing control systems in
355 commercial use, those techniques are not typically part of the
home environment. The present invention, however, provides a
system that can be utilized within the home that allows for the
transmission and reception of enhanced interactive multimedia
information over a telephone network.

360 As stated on page 11 of the Specification, the primary
layers can be enhanced in such a way to provide a perceived
improvement in quality of the multimedia information presented.
The primary layers generally can be enhanced through critical
psychographic parameters take the form of spatial, color, audio,
365 and temporal variables that occur in the primary or secondary
layers.

Increasing the speed of data transmission, as disclosed by
Hoarty, does not teach or suggest "the means for enhancing the
program layers," as provided by the present invention.
370 Furthermore, it is submitted that the discussion in Hoarty
regarding transmission rates referred to by the Examiner is
inapplicable to the IMMS because that discussion is in reference
to a headend computer, rather than the regional processing
center. Since the headend computer is not analogous to IMMS of
375 the present invention, the Examiner appears to be using
impermissible hindsight reconstruction to pick and choose among
isolated features in Hoarty without regard to what device in the
system is performing the specified function in order to reject
the claimed invention.

380 In addition, Hoarty fails to teach or suggest the
combination of "compressing at least a portion of the enhanced
layers" in the interactive multimedia mastering system (IMM),
"transmitting the compressed and uncompressed layers," and then
"receiving the compressed and uncompressed layers" in the IMD,
385 "decompressing the compressed layers" and "mixing the

decompressed layers with the uncompressed layers ... to provide enhanced interactive multimedia information to a display."

390 In Hoarty, by contrast, information is compressed as a whole and decompressed as a whole. Specifically, Hoarty states that the computer nodes connected to the regional processing center are only used to decompress compressed TV channels and to distribute the decompressed TV channels to the homes (Col. 18, ln. 29); and that the headend computer is used to store compressed video that can be accessed by any user of the system
395 (Col. 20, ln. 61).

Hoarty fails to teach or suggest that only a portion of the information can be compressed and then transmitted with the uncompressed portion, as claimed in the present invention. Hoarty also fails to teach that either the nodes or the headend
400 computer are capable of mixing the uncompressed data with the decompressed data. Finally, Hoarty's disclosure of compression/decompression appears to be limited to the headend computer and the computer nodes, not the home interface computer (HIC) located in the home. In the present invention, it is the
405 IMD located in the home that receives the compressed and uncompressed data, decompresses the compressed data, and then mixes the two to provide enhanced interactive multimedia information to a display. Hoarty actually teaches away from such an arrangement: "The use of the invention allows the cable TV
410 company to transmit an expanded number of channels without having to install expensive decompression circuitry in each home..."

Consequently, it is believed that the features of claim 41 in combination with the other features as claimed represent a patentable distinction over Hoarty. Since Claim 31 has been
415 amended to incorporate limitations of claims 41, Claim 31 is also believed to represent a patentable distinction over Hoarty.

The Examiner rejected dependent claims 14 and 18-22 under 35 U.S.C. §103 as being unpatentable over Hoarty et al. in view of U.S. Patent No. 5,283,819 issued to Glick et al. The Examiner
420 rejected Claims dependent 11 and 16 under 35 U.S.C. §103 as being unpatentable over Hoarty et al. in view of U.S. Patent No. 5,195,092 issued to Wilson et al.


It is respectfully submitted that obviousness cannot be established using the above secondary references because the
425 secondary references stand or fall with Hoarty, the primary reference. Since Hoarty fails to teach or suggest the claimed features of independent claims of the present invention, as discussed above, a combination of Hoarty with the secondary references also does not teach or suggest the claimed features of
430 the present invention to establish obviousness.

The remaining dependent claims include the recitations and limitations of the amended independent claims. In view of the foregoing, it is submitted that the claims in the application are patentable over Hoarty and are in condition for allowance.

435 Reconsideration of the rejections and objections is requested.

Applicant's attorney believes that this application is in
condition for allowance. Should any unresolved issues remain,
Examiner is invited to call Applicant's attorney at the telephone
number indicated below.

Respectfully submitted,



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